

single focus either in the wall of the auricle or ventricle, it will not be necessary to describe the electrocardiogram as found in this condition any further.

e. In Auricular Fibrillation the ventricular complex (R and T wave) marks each ventricular contraction, and the unequal spacing of the R wave certifies to the irregularity of the rhythm. The R waves are of different height indicating that the ventricles do not always contract in the same manner. P wave is absent because there is no distinct co-ordinate auricular contraction.

f. The electrocardiogram in Auricular Flutter shows a regularly placed P wave in time, size and form. The rate of the auricles is over 200 and that of the ventricles one-half, one-third or one-quarter that fast.

g. The electrocardiogram in Sino-Auricular Block shows a complete drop of the Auricular and Ventricular complex.

h. In Auriculo-Ventricular Block the electrocardiogram tells the exact time delay of the conduction through the Bundle of His or whether there is complete dissociation between the auricular and ventricular rhythms. The P-(Q or R) interval gives us the date.

i. The electrocardiogram in Arborization or Intraventricular Block is very interesting and instructive. There is a regular rhythm with the normal P wave and the normal P-(Q or R) interval. The Q-R-S interval is over  $\frac{1}{8}$  second in duration and the ventricular part of the curve does not exhibit the features of the normal supra-ventricular stimulation. Of late the S-T interval, if over 0.28 of a second, is considered by some to indicate delayed conduction within the ventricle. The electrocardiogram tells us which branch of the intraventricular conduction apparatus is blocked.

The electrocardiogram denotes which side of the heart is hypertrophied the greater. Thus, if the R wave is highest in lead III and the S depression is longest in lead I, a Right Ventricular Preponderance exists, and when R wave is highest in lead I and S depression deepest in lead III a Left Ventricular Preponderance is present.

It is quite evident, then, that the electrocardiogram has clarified the normal irregular cardiac rhythm, Sinus Arrhythmia as well as the pathological arrhythmias, Premature Beats, telling us where the impulse arises; Paroxysmal Tachycardia, also telling us the type, whether auricular or ventricular in origin, or whether Auricular Flutter is the underlying cause. Again, Auricular Fibrillation is now well understood, thanks to the electrocardiograph, and now there is no doubt when a slow pulse is found, clinically, to demonstrate and analyze such bradycardias whether a partial or complete auriculo-ventricular block exists or not; and, lastly, informing us in the decompensated cardiac cases whether there is an arborization block in the ventricles and thus helping us to prognosticate somewhat.

The electrocardiogram gives us which ventricle is preponderant over the other, thus telling us the

comparative hypertrophy. The increased height of the P wave as found in mitral stenosis with auricular hypertrophy is interesting.

Also, that Digitalis acts on the musculature of the heart itself and not through the nervous system has been determined by the electrocardiograph. 210 Post Street, San Francisco.

### CONTROL OF TUBERCULOSIS.

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A few years ago certain enthusiastic devotees of the tuberculosis campaign were advocating the elimination of tuberculosis from certain communities within a period of five, ten or fifteen years. Much has been learned concerning the universality of infection with tuberculosis during the last five or six years and the optimism of the earlier days of the campaign against tuberculosis is giving way to dogged determination not to endeavor to eliminate tuberculosis within a few years, but to control the spread of the disease, as has been done with certain other infectious diseases.

It is, therefore, of value to consider some of the principal factors in the control of tuberculosis that are at present basic to any well-grounded tuberculosis campaign. If I were to select from the field of tuberculosis endeavor the most important principles upon which one might establish a program, I would choose the following five:

1. The discovery of the cases of tuberculosis and the reporting of these cases to the health authorities. Fundamentally, any campaign that seeks to prevent communicable disease must be based upon a knowledge of the whereabouts of the cases, which knowledge shall be available for purposes of control in one centralized organization with sufficient power to act. This is the first principle of epidemiology.

2. The facilities for the care and instruction of curable cases shall be adequate and shall be properly equipped and maintained. It goes without saying that if even a minor percentage of tuberculosis is curable, it pays to cure this small percentage.

3. The segregation of the infectious and communicable case is vitally necessary.

4. The education and treatment of the non-infectious case by dispensaries, nurses, etc.

5. Education of the general public; first, with regard to the nature and prevention of tuberculosis, and, secondly, in the knowledge of how to maintain a strong resistance against disease.

The National Tuberculosis Association, operating through a state organization in each state and more than 1,000 local associations in the larger centers of population, is building its campaign upon these five principles.

The support of the National Association and its affiliated agencies comes almost entirely from the sale of Tuberculosis Christmas Seals, which will be held this year from December 1 to 11. The control of tuberculosis has for the last decade and more been intimately associated with the little holiday sticker. The continuance of this effort and further progress of the Crusade of the Double-Barred Cross, the international emblem of the fight against tuberculosis, demand the loyal support of physicians and laymen everywhere. One way to support the movement is to buy Christmas Seals this year.